

**In the Specifications:**

**Please replace the paragraphs with corresponding numbers with following paragraphs:**

[0009] The popularity of static nuclear imaging stems from the shorter time it takes to acquire an image, possibly reduced radiation exposure and reduced discomfort to the patient. Shorter imaging time enables scanning of large portions, or even the full length, of the patient's body, by either obtaining several images, possibly partially overlapping, or by slowly moving the camera along the patient body. Sometimes, several consecutive images of the same portion of the patient's body are taken in order to allow the physician to follow the dynamic redistribution of radiopharmaceutical substance in it, and assess the functioning of organs.

[0012] As gamma rays are emitted from the radiopharmaceutical substance, they travel through the collimator, unabsorbed and interact with the detector, which is placed directly adjacent to the collimator. The interactions of the gamma rays with the detector crystal create flashes of light in a process called scintillation. The scintillation light is preferably detected by an array of photomultiplier tubes, which are normally coupled to the back of the crystal. Photomultiplier tubes are used when a very small amount of light is emitted in scintillation. The output signals from the photomultiplier tubes are electric pulses, proportional to the energy of the gamma rays. The electric pulse output is received by position logic circuits, which determine the position where the scintillation event had occurred on the detector. Similarly, in solid-state detectors including solid-state crystals, the incident photons produce electric current corresponding to the energy of the incident photon in the specific location of incidence. This current is picked up by electrodes coupled to the solid-state crystals and is processed. The data is processed by position logic circuits and is transferred to a processing computer in order to process the data into a readable image of the spatial distribution of the radiopharmaceutical substances within the patient's body. The main limitations to the quality of SPE images comes from:

[0019] US Patent 4,873,632 (Logan, et al), titled APPARATUS AND METHODS FOR SCATTER REDUCTION IN RADIATION IMAGING, filed in 1990, discloses discrimination

of counted photons based on measured energy, using the energy information for correction of scattering and smoothing the resulted image to reduce noise. Iterative reconstruction methods are used for SPECT. US 6,943,355 to the same assignee PCT/IL01/00730, ~~published as WO 02/12918~~ discloses a method for image reconstruction that results in enhanced three-dimensional nuclear image.

[0032] (b) ~~obtaining~~ generating a two dimensional image of a spatial distribution of the pharmaceutical substance within the portion of the body by mathematically analyzing the acquired ~~data~~ image in conjunction with the weight values.